

What is Claimed is:

1. A telephone interface for a handicapped individual comprising:

a processor configured to control the telephone interface;

5 a public switched telephone network (PSTN) interface connected to the processor and to the PSTN;

a sound generator connected to the processor and to the PSTN interface configured to generate synthesized speech responsive to said processor;

10 a display device connected to the processor and configured to display one of a plurality of menus and to highlight an active area of the menu responsive to the processor; and

an input device connected to the processor and including a sensor placed adjacent to a controllable voluntary muscle of an individual, the input device configured to generate a signal to the processor responsive to the sensor detecting voluntary muscle movement;

15 the processor further configured to perform a function described by the active portion of the menu responsive to the signal.

2. A telephone interface in accordance with claim 1 wherein the sensor comprises a piezo-electric sensor configured to be responsive to voluntary muscle movement.

3. A telephone interface in accordance with claim 1 wherein the input device is  
20 configured to synthesize a mouse click responsive to the sensor detecting voluntary muscle movement.

4. A telephone interface in accordance with claim 1 wherein one of said plurality of menus comprises a plurality of telephony functions and the processor is configured to control the PSTN interface according to receiving a signal when one of the telephony functions is  
25 active.

5. A telephone interface in accordance with claim 4 wherein the plurality of telephony functions are selected from the list comprising: on-hook, off-hook, sending and receiving dual-tone, multi-frequency signals and sending and receiving voice signals.

30 6. A telephone interface in accordance with claim 1 wherein one of said plurality of menus comprises words and phrases and the processor is configured to cause the sound generator to generate speech according to receiving a signal when one of the words and phrases is active.

7. A telephone interface in accordance with claim 1 wherein one of said plurality of menus comprises alphanumeric characters and the processor is configured to build words according to the received signal when one of the alphanumeric characters is active.

5 8. A telephone interface in accordance with claim 1 wherein the processor is configured to change the active area of the menu periodically.

9. A telephone interface in accordance with claim 8 wherein the processor is configured to scan the menu cyclically.

10 10. A method for controlling a telephone interface for a handicapped individual, said telephone interface comprising a processor, a display connected to the processor, a telephone network interface connected to the processor and to the public switched telephone network (PSTN) and an input device connected to the processor and to a sensor that generates a signal in response to voluntary muscle movement of the handicapped individual, said method comprising:

15 displaying a menu on the display indicating a plurality of actions available;  
periodically making one area of the display active;  
performing one or more functions described by the active area of the display responsive to a signal from said input device.

20 11. A method in accordance with claim 10 wherein performing one or more functions comprises operating said telephone network interface to perform the functions of going off-hook, going on-hook, transmitting and receiving telephony signaling and transmitting and receiving verbal communications.

12. A method in accordance with claim 10 wherein performing one or more functions comprises displaying one or more further menus.

25 13. A method in accordance with claim 10 wherein performing one or more functions comprises assembling alphanumeric characters into words, phrases or sentences by said processor and displaying the words, phrases or sentences at said display.

30 14. A method in accordance with claim 10 wherein said telephone interface device further includes a speech synthesizer connected to said processor and said telephone network interface, and wherein performing one or more functions comprises generating speech at said speech synthesizer.